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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/689,260	10/20/2003	Shinichi Imade	SAS2-PT061	2883

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EXAMINER
BLACKMAN, ROCHELLE ANN J

ART UNIT	PAPER NUMBER
2851	

DATE MAILED: 09/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/689,260	IMADE, SHINICHI	
	Examiner	Art Unit	
	Rochelle Blackman	2851	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 June 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,29-33,57,60,63-65 and 72-79* is/are pending in the application.

4a) Of the above claim(s) *claims 6-28, 34-56, 58, 59, 61, 62, and 66-71* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,29-33,57,60,63-65 and 72-79* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *6/9/06 & 8/11/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on June 9, 2006 has been entered.

Election/Restrictions

Due to the continued examination of this application, the previous restriction requirement made in the Office action dated February 10, 2005 is hereby reinstated. Species 3(B) (Fig. 17) drawn to claims 1-5, 29-33, 57, 60, 63-65, and 72-79, which Applicant elected without traverse in the reply filed on March 11, 2005, will be examined and claims 6-28, 34-56, 58, 59, 61, and 62 will remain withdrawn as being directed to a non-elected species, including claims 66-71, which were previously cancelled due to the claims were directed to a non-elected species and did not depend upon or otherwise include all the limitations of an allowed generic claim. Accordingly, claims 1-5, 29-33, 57, 60, 63-65, and 72-79 as they appear in the 312 Amendment After Allowance filed on March 3, 2006, will be examined.

Response to Arguments

Applicant's arguments with respect to claims 1-5, 29-33, 57, 60, 63-65, and 72-79 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

Claims 72, 73, 75, and 76 are objected to because of the following informalities: in claims 72 and 73, line 13, "optical means" should be - -at least one optical means- - and "are" should be - -is- -; and in claims 75 and 76, line 14, "optical means" should be - -at least one optical means- - and "are" should be - -is- -. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1-3, 5, 29-31, 33, 57, 72-74 is rejected under 35 U.S.C. 102(b) as being anticipated by McCoy (U.S. Patent Application Publication No. 2002/0084951).

Regarding claim 1, McCoy discloses an illumination apparatus illuminating an objective illumination region (see FIG. 9), comprising: a plurality of illuminants (see 106 and 108 of FIG. 9) having light-emitting surfaces radiating diffused light; an illuminant substrate (see 102 of FIG. 9) in which the illuminants are disposed so as to be set in

array on the circumference; at least one optical member (see 104 of FIG. 9) configured to guide the diffused light to the specific objective illumination region (see 120 or 124 in FIG. 9 and see paragraph [0046]); a movable section (see 102 of FIG. 9 and paragraph [0046]) configured to drive the optical member so as to be rotatable around the center of the circumference serving as a rotation center; and a lighting control section (see 102 and see *A single one of the LED's...is pulsed at a high speed...* in paragraph [0046]) configured to control a periodic successive light-emitting timing of the plurality of illuminants (see paragraph [0046]), wherein the at least one optical member is adapted to guide the light from the illuminants in a common direction (in a direction towards element 120 or 124 in FIG. 9) in order to illuminate the specific objective illumination region (see paragraph [0046]), and the movable section and the lighting control section operate together such that the quantity of light per unit time of the diffused light guided to the objective illumination region is within a predetermined range (see paragraph [0046]).

Regarding claims 2 and 30, McCoy discloses the apparatus wherein the lighting control section lights the illuminants whose light-emitting surfaces are positioned at an area on the illuminant substrate which is guided by the optical member (see location of "illuminants" 106 and 108 relative to "illuminant substrate" 102 in FIG. 2).

Regarding claims 3 and 31, McCoy discloses the apparatus wherein a number of the illuminants which are lit is always the same number (see paragraph [0046]).

Regarding claims 5 and 33, McCoy discloses the apparatus wherein the number of the illuminants disposed on the illuminant substrate is an even number (see 106 and 108 in FIG. 9), two optical members are provided and are made to be one set, wherein at least one of the set is provided (any two of "optical members" 104 in Fig. 9 are considered to be or can be made "one set"), and the optical members of the set guides the diffused light radiated from the illuminant positioned at a position which is point symmetrical with respect to the rotation center, to the specific objective illumination region (see direction of light emitted from "illuminants" 106 and 108 to elements 110 and 120 in Fig. 9).

Regarding claim 29, McCoy discloses an illumination apparatus illuminating an objective illumination region (see FIG. 9), comprising: a plurality of illuminants (see 106 and 108 of FIG. 9) having light-emitting surfaces radiating diffused light; an illuminant substrate (see 102 of FIG. 9) in which the illuminants are disposed so as to be set in array on the circumference; at least one optical member (see 104 of FIG. 9) configured to guide the diffused light to the objective illumination region (see 120 or 124 in FIG. 9 and paragraph [0046]); a movable section (see 102 of FIG. 9 and paragraph [0046]) configured to drive the optical member so as to be rotatable around the center of the circumference serving as a rotation center; and a lighting control section (see 102 and see *A single one of the LED's...is pulsed at a high speed...* in paragraph [0046]) configured to control a periodic successive light-emitting timing of the plurality of illuminants (see paragraph [0046]), wherein the at least one optical member is adapted to guide the light from the illuminants in a common direction (in a direction towards

element 120 or 124 in FIG. 9) in order to illuminate the specific objective illumination region (see paragraph [0046]), and the movable section and the lighting control section operate together such that an area of the light-emitting surface emitting the diffused light for the light guided to the specific objective illumination region is within a predetermined range in variations in time (see paragraph [0046]).

Regarding claim 57, McCoy discloses an illumination apparatus illuminating an objective illumination region (see FIG. 9), comprising: a plurality of illuminants (see 106 and 108 of FIG. 9) having light-emitting surfaces radiating diffused light; an illuminant substrate (see 102 of FIG. 9) in which the illuminants are disposed so as to be set in array on the circumference; a plurality of optical members (see 104 of FIG. 9) which each have incident end surfaces (see surfaces of 104 facing "illuminants" 106 and 108 in FIG. 9) and outgoing end surfaces see surfaces of 104 facing element 120 in FIG. 9), and which are configured to radiate the diffused light incident from the incident end surfaces and guide the diffused light to the objective illumination region (see 120 or 124 in FIG. 9 and see paragraph [0046]); a movable section (see 102 of FIG. 9 and paragraph [0046]) configured to drive the plurality of optical members so as to be rotatable around the center of the circumference serving as a rotation center; and a lighting control section (see 102 and see *A single one of the LED's...is pulsed at a high speed...* in paragraph [0046]) configured to control a light-emitting timing of the plurality of illuminants, wherein the respective outgoing end surfaces of the plurality of optical member are in rotation symmetrical relationship with respect to the center of the circumference (see positions of 104 in FIG. 9).

Regarding claim 72, McCoy discloses an illumination apparatus illuminating a specific objective illumination region (see FIG. 9), comprising: a plurality of illuminants (see 106 and 108 of FIG. 9) having light-emitting surfaces radiating diffused light; an illuminant substrate (see 102 of FIG. 9) in which the illuminants are disposed so as to be set in array on the circumference; at least one optical means (see 104 of FIG. 9) for guiding the diffused light to the specific objective illumination region (see 120 or 124 in FIG. 9 and paragraph [0046]); movable means (see 102 of FIG. 9 and paragraph [0046]) for driving the optical means so as to be rotatable around the center of the circumference serving as a rotation center; and lighting control means (see 102 and see A single one of the LED's...is pulsed at a high speed... in paragraph [0046]) for controlling a periodic successive light-emitting timing of the plurality of illuminants, wherein the optical means are adapted to guide the lights from the illuminants in a common direction (in a direction towards element 120 or 124 in FIG. 9) in order illuminate the specific objective illumination region, and the optical means and the lighting control means operate together such that the quantity of light per unit time of the diffused light guided to the specific objective illumination region is within a predetermined range (see paragraph [0046]).

Regarding claim 73, Kusunose discloses an illumination apparatus illuminating a specific objective illumination region (see FIG. 9), comprising: a plurality of illuminants (see 106 and 108 of FIG. 9) having light-emitting surfaces radiating diffused light; an illuminant substrate (see 102 of FIG. 9) in which the illuminants are disposed so as to be set in array on the circumference; at least one optical means (see 104 of FIG. 9) for

guiding the diffused light to the objective illumination region (see 120 or 124 in FIG. 9 and paragraph [0046]); movable means (see 102 of FIG. 9 and paragraph [0046]) for driving the at least one optical means so as to be rotatable around the center of the circumference serving as a rotation center; and lighting control means (see 102 and see A single one of the LED's...is pulsed at a high speed... in paragraph [0046]) for controlling a periodic successive light-emitting timing of the plurality of illuminants, wherein the optical means are adapted to guide the lights from the illuminants in a common direction (in a direction towards element 120 or 124 in FIG. 9) in order to illuminate the specific objective illumination region (see paragraph [0046]), and the movable means and the lighting control means operate together such that an area of the light-emitting surface emitting the diffused light for the light guided to the illumination region is within a predetermined range in variations in time (see paragraph [0046]).

Regarding claim 74, McCoy discloses an illumination apparatus illuminating an objective illumination region (see FIG. 9), comprising: a plurality of illuminants (see 106 and 108 of FIG. 9) having light-emitting surfaces radiating diffused light; an illuminant substrate (see 102 of FIG. 9) in which the illuminants are disposed so as to be set in array on the circumference; a plurality of optical means (see 104 of FIG. 9) which each have incident end surfaces (see surfaces of 104 facing "illuminants" 106 and 108 in FIG. 9) and outgoing end surfaces (see surfaces of 104 facing element 120 in FIG. 9), and which are for radiating the diffused light incident from the incident end surfaces and guiding the diffused light to the objective illumination region (see 120 or 124 in FIG. 9 and paragraph [0046]); movable means (see 102 of FIG. 9 and paragraph [0046]) for

driving the optical means so as to be rotatable around the center of the circumference serving as a rotation center; and lighting control means (see 102 and see *A single one of the LED's...is pulsed at a high speed...* in paragraph [0046]) for controlling a light-emitting timing of the plurality of illuminants, wherein the respective outgoing end surfaces of the plurality of optical means are in rotation symmetrical relationship with respect to the center of the circumference (see positions of 104 in FIG. 9).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 4 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCoy (U.S. Patent Application Publication No. 2002/0084951) in view of Tiao (U.S. Patent No. 6,227,669).

McCoy discloses the claimed invention except for the number of the illuminants disposed on the illuminant substrate being an "odd number".

Tiao teaches providing a number of the illuminants disposed on an illuminant substrate is an odd or even number (see 204 of FIGS. 2A and 2C; 712 of FIG. 7A; and 812 of FIG. 8A).

It would have been obvious to one ordinary skill in the art at the time the invention was made to either increase or decrease the number of illuminants on the illuminant substrate of the "illumination apparatus" of the McCoy reference to make the number of illuminants an "odd number", as taught by Tiao for the purpose of increasing or decreasing the color gamut in the projected image.

2. Claims 63-65 and 75-77 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCoy (U.S. Patent Application Publication No. 2002/0084951) in view of Hashimoto (JP Patent No. 06-082909).

McCoy discloses the claimed invention, as similarly recited above, including lenses 120 and 124 that projection images towards mirrors 110 and 114 to be observed by way of viewing lenses 112 and 116 by a right and left eye of a viewer. However McCoy does not appear to disclose the image projection apparatus comprising "a display device disposed at an objective irradiation region of the illumination apparatus; and a projection lens for projecting an image formed at the display device on a screen".

Hashimoto teaches providing an image projection apparatus (Drawings 1-5) comprising a display device (see 5, 51, 52 of Drawings 1 and 5) disposed at an objective irradiation region of a illumination apparatus (see 4, 6, 61-63 of Drawings 1-5); and a projection lens (see 3 of Drawings 1-5) for projecting an image formed at the display device on a screen (see 7 of Drawings 1 and 2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made substitute the mirrors and the viewing lenses in the "image

projection apparatus" of the McCoy reference for a "display device", "projection lens", and "screen" with the salient features of the Hashimoto reference, for purpose of displaying the projected images to more than one viewer at once.

3. Claims 60, 78, and 79 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCoy (U.S. Patent Application Publication No. 2002/0084951) in view of Levis et al. (U.S. Patent No. 5,829,858).

McCoy discloses the claimed invention except for the optical member and/or the plurality of optical members including an "optical rod" and/or a "tapered rod in which an area of the outgoing end surface thereof is larger than an area of the incident end surface thereof".

Levis teaches providing an optical member comprising an optical rod/ a tapered rod in which an area of the outgoing end surface thereof is larger than an area of the incident end surface thereof (for example, see 15 of FIG. 1).

It would have been obvious to one ordinary skill in the art at the time the invention was made to provide an "optical rod" and/or "tapered rod" as the optical member or members in the "illumination apparatus" of the McCoy reference, as taught by Levis reference for the purpose of mixing the light by internal reflection and producing light that is uniform in color and intensity across an exit pupil of the "optical member" (see abstract).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rochelle Blackman whose telephone number is (571) 272-2113. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diane Lee can be reached on (571) 272-2399. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



RB

William Perkey
Primary Examiner